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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/696,098	10/25/2000	Michael L. Petroff	6206-000003	4129
7590 04/08/2004 Harness, Dickey & Pierce, P.L.C. P.O. Box 828 Bloomfield Hills, MI 48303			EXAMINER WOO, STELLA L	
			ART UNIT 2643	PAPER NUMBER

DATE MAILED: 04/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/696,098

Applicant(s)

PETROFF, MICHAEL L.

Examiner

Stella L. Woo

Art Unit

2643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-23 is/are allowed.
- 6) ☒ Claim(s) 1-6,9-11,13-15,24-29 and 32-36 is/are rejected.
- 7) ☒ Claim(s) 7,8,12,16,30 and 31 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

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DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6, 9, 24-29, 32-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamato et al. (US 5,710,818, hereinafter "Yamato").

Regarding claims 1, 24, 33, Yamato discloses a digital signal processing system (Figure 2; automotive acoustic reproducing apparatus 1 includes digital signal processor 14, col. 6, lines 7-8), comprising:

input ports (right channel line 13 and left channel line 12 receive right and left stereo signals from acoustic signal source 11; col. 5, line 57 – col. 6, line 6);

output ports (right and left audio signals are output to loudspeakers SR and SL; col. 6, lines 18-25);

a digital signal process (signal processing unit 14; Fig. 3; col. 6, lines 7-17), which further includes

a phase shift device (phase unit PL or PR; col. 7, lines 33-40); and

a time delay device (delay unit TL or TR; col. 7, lines 24-26).

Regarding claims 2-4, 25-26, 34-35, Yamato provides for processing signals in the frequency range of 200 to 400 Hz (col. 6, lines 45-47) as controlled by controller 18 in response to inputs from an input unit 17 (col. 6, lines 9-12).

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Regarding claim 5, 27-28, 36, time delay units TL and TR delay signals by a predetermined delay time tL and tR (col. 7, lines 24-26, 31-33).

Regarding claim 6, 29, note filters f1 through f5 (Figure 3).

Regarding claim 9, 32, note adder MC (Figure 9).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 10-11, 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamato in view of Kihara (US 4,817,162).

Yamato differs from claims 10-11 and 13-15 in that it does not specify the phase shift device as comprising a non-inverting high-order low-pass filter, a 90-degree phase shifted narrow band-pass filter and an inverting high-order high-pass filter and a signal summer. However, Kihara teaches the well known use of such components to comprise a phase shifter (note low-pass filter 1, high-pass filters 2 and 4, band-pass filter 2/3, phase inverter circuit 5 and adder 6; Figure 7; col. 1, line 64 – col. 2, line 10) such that it would have been obvious to an artisan of ordinary skill to incorporate such well known phase shifting circuitry elements, as taught by Kihara, within the phase units PL and PR of Yamato.

Allowable Subject Matter

5. Claims 17-23 are allowed.
6. Claims 7-8, 12, 16, 30-31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

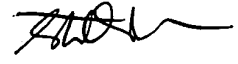
Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yoshida et al. (US 6,477,255, US 6,038,325, and US 5,854,847), Klayman et al. and Montag et al. show other automotive stereophonic audio systems.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stella L. Woo whose telephone number is (703) 305-4395. The examiner can normally be reached on Monday-Tuesday, Thursday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on (703) 305-4708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stella L. Woo 
Primary Examiner